

TLU Action 1.D.1 – Address Highway Travel Speeds (Revised December 15, 2008)

Summary

The State of NH should explore ways to maximize efficiency in highway vehicle travel, including mechanisms to reduce average travel speeds on state and interstate highways and to improve driving habits to improve overall vehicle fuel efficiency. This could occur through enforcement of existing speed limits and through driver education programs to increase driver awareness of the potential fuel savings from changes in driving behavior. Evaluation of a lower speed limit should also be conducted.

Program Description

1. Mechanism (*i.e., how the policy or program achieves the desired result*):

The speed and manner in which a vehicle is driven has a significant impact on how fuel efficient that vehicle is. Because the amount of fuel used is directly related to carbon emissions (about 20 pounds of CO₂ per gallon of fuel used) improvements in fuel economy will reduce carbon emissions.

U.S. Department of Energy data show that fuel economy decreases rapidly at speeds above 55 mph. The average loss in fuel economy is 9.7 percent when speed is increased from 55 to 65 mph, and an additional 8.2 percent when speed is increased from 65 to 70 mph¹. Data from the American Trucking Association shows a loss in fuel economy of 27% when truck speed increases from 65 to 75 mph². At a posted speed of 65 mph, many vehicles travel at 65 to 75 mph; and a significant percentage of traffic moves at even higher, less efficient speeds. The publication “Reducing Traffic Speed” by the Technology Transfer Center New Hampshire LTAP at UNH states: “Police Enforcement lowers traffic speeds when police consistently issue tickets. However, cities and towns must commit personnel for a long time. When enforcement ends, drivers will return to the prior speeds.” The result of diminished enforcement is that motorists on major highways drive in excess of 65 mph. Stricter speed enforcement would benefit those who already adhere to speed limits as well as those who prefer to exceed speed limits. The benefits would come in the form of fuel savings, emission reductions, and reduced incidence of highway injuries and fatalities.

Ecodriving USA, an educational effort sponsored by the Alliance of Automobile Manufacturers, has developed materials that could be used by the state to help educate motorists on the impact of their driving habits. Based on their on-line calculator, with the successful implementation of the EcoDriving program in the state, New Hampshire citizens could reduce carbon dioxide emissions by 1 million tons annually³. Some of the actions motorists can take to improve fuel economy include avoiding rapid stops and starts (a potential 33% savings), anticipating changes in speed to keep rolling in traffic rather than stopping and starting (a potential 20% savings), and using cruise control when on level terrains (a potential 7% savings).

2. Implementation Plan (*i.e., how to implement the specific policy or program*):

¹ http://www1.eere.energy.gov/vehiclesandfuels/facts/favorites/fcvt_fotw222.html

² <http://drive55.org/content/blogcategory/21/38/>

³ According to www.ecodrivingusa.com accessed on December 15, 2008

- a. *Method of Establishment (e.g., legislation, executive order):* Executive Order and/or legislation, changes to state's driver education requirements, outreach efforts.
 - b. *Resources Required:* Department of Transportation, Law Enforcement, funds for new speed limit signs, funds for outreach and education.
 - c. *Barriers to Address (especially for medium to low feasibility actions):* Politics associated with the change, enforcement costs, difficulties in changing personal behavior.
3. Parties Affected by Implementation (i.e., residents, businesses, municipalities, etc.):
 - a. *Parties Responsible for Implementation:* State and local government, schools.
 - b. *Parties Paying for Implementation:* State and local government.
 - c. *Parties Benefiting from Implementation:* Consumers – safer roads, and better gas mileage.
4. Related Existing Policies and Programs (i.e., those that address similar issues without interacting):
5. Complementary Policies (i.e., those that achieve greater reductions through parallel implementation):
 - a. *Existing:*
 - b. *Proposed:* TLU and GLA actions that address changes to vehicle operation such as reduced idling and improved maintenance
6. Timeframe for Implementation: 6 months to 1 year to develop education and outreach materials and develop coordination/cooperation among law enforcement agencies to better enforce current speed limits. Changing speed limit signs could be done in about 2 weeks.
7. Anticipated Timeframe of Outcome: Immediate

Program Evaluation

1. Estimated CO₂ Emission Reduction (from changes to speed limits only):

Timeframe	CO ₂ Emission Reductions (MMTCO ₂ e per year)	
	Enforce Current Highway Speed Limits ⁴	Lower Posted Highway Speed Limits ⁵
Short-term (2012)	0.06	0.11
Mid-term (2025)	0.18	0.35
Long-term (2050)	0.25	0.48

2. Economic Effects:

⁴ Assumes that a reduction in *average* highway speed from 70 to 65 would result in an 8.2% increase in fuel efficiency applied to highway miles assumed to be 40% of the total Vehicle Miles Traveled (VMT) annually in New Hampshire.

⁵ Assumes that a reduction in *average* highway speed from 70 to 55 would result in an 17.1% increase in fuel efficiency applied to highway miles assumed to be 40% of the total Vehicle Miles Traveled (VMT) annually in New Hampshire.

- a. Costs:
 - i. Implementation Cost: Low for both scenarios
 - ii. Timing: Constant / even for both scenarios
 - iii. Impacts: State government for both scenarios
 - b. Savings:
 - i. Potential Economic Benefit: Moderate and moderately high, respectively
 - ii. Timing: Low short-term / mostly long-term for both scenarios
 - iii. Impacts: Consumer – evenly distributed for both scenarios
3. Other Benefits/Impacts:
- a. *Environmental*: This would reduce emissions of carbon dioxide, greenhouse gases, and other primary air pollutants in order to mitigate the effects of climate change and pollution of our ecosystems. This would lead to improved air and water quality directly as well as have more indirect effects on the fish and wildlife and the ecosystems upon which they depend.
 - b. *Health*: Human health benefits will be realized by decreasing exposure to toxic and hazardous pollutants, many of which may have an effect that is exacerbated by the increase in hot summer days. Avoiding the impacts of air pollution can reduce the incidence of cardiac and respiratory disease. There will be other health benefits due to the reduction in car accidents brought about by safer highways.
 - c. *Social*: Reducing vehicle speeds will slightly impact drive times but consumers will save money & highways will be safer. In addition there will be a reduced dependence on foreign oil and the associated economic stability that may bring through reduced economic risks of the global energy market as well as increase in dollars kept in state.
 - d. *Other*:
4. Potential for Implementation (*i.e., including challenges, obstacles and opportunities*):
- a. *Technical*: There are no technical barriers to implementation. According to the NH State Police, the accuracy of police radar for speed limit enforcement is ± 1 mph when the radar is stationary, and ± 2 mph when moving.
 - b. *Economic*: No data are available on whether additional law enforcement officers would be needed to implement the program, but additional tickets could bring in necessary revenue. No data has been developed on the cost of a motorists outreach and education effort. Should changing the speed limit signs be required it is not expensive.
 - c. *Statutory/Regulatory*: Changes to speed limits would require legislation, but enforcement of existing speed limits as well as increasing consumer awareness would not. Changing requirements for driver education to include efficient driving habits could likely be done through administrative rule changes.
 - d. *Social*: With proper marketing to consumers changes in driver behavior could be viewed in a very positive light due to the support for climate change and energy security efforts. It might be difficult to get the public to buy into reduced speed limits – this action could be perceived as infringing on personal freedoms.

5. Other Factors of Note: This could be combined with other programs such as allowing buses to travel at higher speeds which would help encourage commuters to use public transit. Emissions of nitrogen oxide, the primary pre-cursor pollutant to ground level ozone (smog) formation, also increase at speeds above 48 mph.
6. Level of Group Interest: High. The working group considered this an essential action to undertake in the near-term to achieve significant reductions in CO₂ emissions from the transportation and land use sector.
7. References:
 - <http://www.t2.unh.edu/fall04/pg6.html>
 - <http://drive55.org/content/view/18/5/>
 - http://www1.eere.energy.gov/vehiclesandfuels/facts/favorites/fcvt_fotw222.html